Bulletin of the Academy of Sciences of the USSR Division of Chemical Science 1976 vol.25 N5, pages 1088-1092

Reaction of dialkylphosphorous acids with 2-methylindane-1,3-dione

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Abstract

1. 2-Methylindane-l,3-dione reacts with dialkylphosphorous acids in the presence of triethylamine at ~20° with formation of 2-methyl-3-hydroxyindan-1-on-3-yl dialkylphosphonates. Upon further standing of the reaction mixture the latter isomerize to the corresponding phosphates. 2. 2-Methyl-3-hydroxyindan-1-on-3-yl dialkylphosphonates upon reaction with thionyl chloride are transformed to 2-methylind-2-en-1-on-3-yl dialkylphosphonates. 3. Reaction of 2-methylindane-1,3-dione with diethylphosphorous acid in excess triethylamine at 160° proceeds complexly with formation of 2-methylind-2-en-1-on-3-yl diethylphosphate and a series of products not containing phosphorous. Unsaturated dialkyl phosphates were also obtained from 2-bromo-2-methylindane-1,3-dione and trialkyl phosphites. 4. 2-Methylind-2-en-1-one reacts with diethylphosphorous acid in the presence of triethylamine with formation of 2-methy--1-hydroxyind-2-en-1-yl diethylphosphonate.

http://dx.doi.org/10.1007/BF00921998